JANUARY 22, 1951 NEWS ISSUE

Electrical World

A McGRAW-HILL PUBLICATION

Warren C. Drummond, New Vice President of Pioneer Service & Engineering Co

Still More Power for Big Creek Project . . . Page 16

The Metals Problem Gets Worse . . . Page 30

"We can't out-number them
We can't out-slave them
But we can out-produce them"

Electric power holds key to increased productivity

"Come war or peace, or any bitter mixture thereof, *increased productivity* is our best bet for meeting whatever the future holds. To me, it is the only way to even the scales between the armed millions of Communism and the small standing armies of the free world."

That's the way G-E Vice-President C. H. Lang expressed it, at a recent meeting at the National Press Club in Washington. "But," he says, "the blunt fact is we can never be satisfied that, at any one time, we hold a sufficient margin of productive strength.

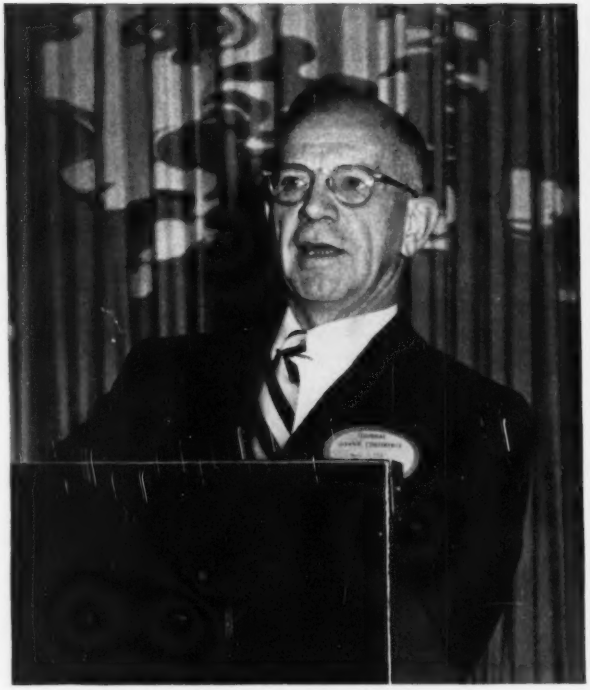
"So we come to electric power, the dynamic tool that holds the key to increased productivity—by increasing output per man-hour. The electric utility industry has done a remarkable job of forecasting and planning to take care of the country's growing power needs. There is today enough power. There will continue to be enough, if the generating and distribution equipment now on order, and planned, is installed substantially as scheduled."

The electric utility industry has been a vital factor in keeping the American worker and American industry far ahead in productivity. General Electric intends to help keep it that way. Apparatus Dept., Schenectady 5, N. Y.

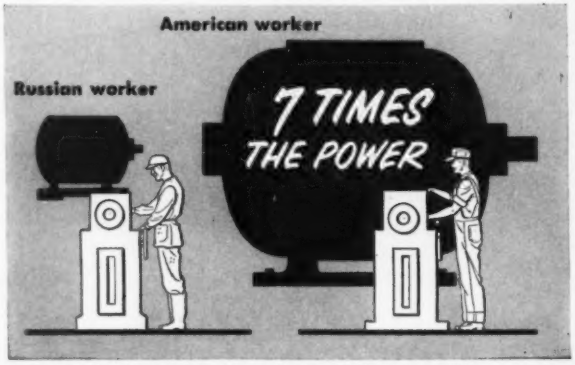
More Power to America

GENERAL ELECTRIC

281-150



Chester H. Lang, Vice-President and Chairman of G.E.'s Defense Projects Committee tells press of remarkable job being done by electric utility industry.



In 1950, the free American worker had the help of about 13,000 kilowatt-hours — about seven times the power available to the Russian worker.

The Electrical Week

IN WASHINGTON—A new 3.9-million-kw, $1.5-billion defense power program has been unveiled by President Truman. Main portion of the program consists of seven federal projects (p 4) . . . A freeze order has virtually stopped all commercial building until Feb. 15 (p 5) . . . A new transmission service contract between Montana Power Co and the Bureau of Reclamation was approved by Interior (p 6) . . . To meet the defense emergency 1 million kw of additional power could be made available in the Pacific Northwest within the next three years, according to a BPA survey (p 12) . . . Ansbert G. Skina, Idaho electrical engineer, has been appointed chief of the Construction Expediting Branch of DPA (p 12) . . . FPC has issued a 50-year license to Washington Water Power Co for the 200,000-kw Cabinet Gorge project (p 13) . . . And Electric Energy, Inc, power project in Kentucky has received SEC authorization (p 13).

ELSEWHERE—Three power companies in two states teamed up on Jan. 9 to assure a 17-year-old polio victim a safe journey in his iron lung from Lancaster, Pa. to Baltimore, Md. (p 6) . . . The growing need for increased cooperation between power companies and manufacturers was stressed at the Industrial Power Application Conference, held by General Electric Co and Western Massachusetts Electric Co at Springfield, Mass., Jan. 10 (p 11) . . . An instantaneous peak of 1,937,000 kw was reached at Grand Coulee Dam on Jan. 8, believed to be a world's record (p 12) . . . State construction of standby steam-power generating plants has been suggested to the Washington state legislature by Gov Arthur B. Langlie (p 13) . . . Canadian central stations last November set two more records for output and consumption of primary power (p 19) . . . The metals problem is getting worse. And it's only the beginning (p 30).

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The new A-bomb plant which is to be constructed near Paducah, Ky., is already giving the city a "headache." Thousands of migrant workers, mostly construction laborers, are flocking to the city. Over 15,000 persons have registered at Paducah with the Employment Division, Kentucky Department of Economic Security since Dec. 10.

Electric utilities are increasing their use of gas as a fuel but are using less oil.

President Truman and the private utility industry agree that the nation needs more electric power, but there the agreement ends.

The Atomic Energy Commission will use part of the 5,000-sq mi Las Vegas, Nev., bombing and gunnery range for weapons experiments. It's somewhat closer to the AEC laboratories than the commisson's other testing site—Eniwetok Proving Ground, Marshall Islands.

In Bournemouth, England, department stores have hired extra detectives to guard against shoplifting during power blackouts. The British Electricity Authority has been ordering blackouts in the afternoons to conserve coal.

Fantasy Dept—A Massachusetts utility man reminisces that in the early days of the industry a trouble-shooting lineman would never climb a pole without a derby on his head. The hard hat was considered insulation against electric shock.

The ever increasing demand for electric energy is forcing utilities to increase their coal reserves. On Dec. 1 the industry stockpile was 32,276,580 tons, the largest in history. But based on November consumption this was only enough to last 111 days, a period often exceeded in the past.

Notes From The News

Australia's prime minister has been asked to make $6 million available for the purchase of American "packaged" power plants to relieve the power blackouts in Sydney. The industrial city is mainly interested in the 5,000-kw units which were developed during World War II for rapid installation in new load centers. The plants are completely self-contained and are supplied as prefabricated units ready for installation. They need only a concrete foundation and a fibro-asbestos shed . . . "Birth of a Giant," a film dealing with the McNary Dam project, will be one of the first films to be used on a color television network. The film will be televised over WORTV in New York sometime in February. A second documentary film on McNary dealing with reconstruction, river closure, and opening of the navigation lock will be ready for release in March . . . Residents of Stallings, Ill., were inconvenienced for 20 minutes when a cat crawled into the steel structure of an Illinois Power Co substation causing lights to burn only with a faint glow. The cat brushed against wires carrying 33,000 v shorting the circuit. Three current transformers were ruined.

Truman Seeks More Federal Power

Budget for Fiscal 1952 Includes $1.5 Billion for 3.9-Million-Kw Defense Program; TVA Steam and St. Lawrence Plants Recommended

A new 3.9 million-kw, $1.5-billion defense power program has been unveiled by President Truman. The main portion of the program consists of seven federal projects which would take three to seven years to complete.

The projects proposed are St. Lawrence (with seaway); Hells Canyon, The Dalles, and Ice Harbor, all in the Columbia Basin; Old Hickory on the Cumberland River in Tennessee; Gavins Point on the Missouri River between Nebraska and South Dakota; and a new steam plant for the Tennessee Valley Authority.

Announcement of the program was made in the President's message to Congress accompanying the federal budget for fiscal 1952, beginning July 1, 1951.

The President also included funds for planning federal redevelopment of power at Niagara Falls.

No site has been selected for the 270,000-kw TVA steam plant which is designated as "Steam Plant B." It will be located in west central Tennessee and will be the fourth steam plant built by TVA since the controversial New Johnsonville Plant was approved by Congress in 1949.

Other power highlights of the budget included:

Major expansion of the Department of Interior's year-old Southeastern Power Administration.

Truman's New Federal Defense Power Program

Project	Proposed Capacity (kw)	Estimated Date First Power	Total Cost	Requested Funds For Fiscal '52 (000 Omitted)
St. Lawrence*	940,000	4–7 Years	$600,000**	$20,000
The Dalles	980,000	Nov., '56	326356	18,000
Hells Canyon	900,000	5 Years	433,000	8,000
TVA Steam Plant "B"	270,000	1953	45,000	16,568
Ice Harbor	260,000	Dec., '53	95,899	4,000
Gavins Point	100,000	April, '56	44,900	5,000
Old Hickory	100,000	Dec., '53	49,120	8,000
Totals	3,550,000		$1,594,285	$79,568

* Power and seaway, U. S. side only.
** This could reach a maximum of $1,050,000.

1951 Appropriations vs Fiscal '52 Requests

Agency	Appropriated Fiscal '51 (000 Omitted)	Requested Fiscal '52 (000 Omitted)
Army Corps of Engineers		
Flood control	$385,308	$328,365
Rivers and harbors	202,812	220,240
Interior		
Reclamation	325,494	252,075
Bonneville Power Adm	44,647	75,000
Southwestern Power Adm.	9,443	5,400
Southeastern Power Adm.	150	4,300
Rural Electrification Adm		
Salaries & expenses	8,550	8,500
Electrification loans	350,000	100,000
Telephone loans	32,500	9,000
Tennessee Valley Authority	131,214	248,568
Federal Power Commission	4,394	4,395
Securities & Exchange Com	6,230	5,924
Total	$1,500,742	$1,261,767

"Green light" for power construction by the Corps, Reclamation, TVA, and Interior marketing agencies.

Although Sepa is asking for $4 million in construction funds, the most significant item in its budget request is a $200,000 continuing fund. This fund would be established in the Treasury from power sale proceeds and could be used by Sepa to rent power facilities or to buy power and energy. A similar fund established for the Southwestern Power Administration permitted that agency to enter into leasing arrangements with co-op federations in the Southwest by which SPA will operate a vast network of transmission lines built with funds loaned by REA, plus giving SPA access to the output of REA-financed steam generating plants.

More than $3 million of Sepa's construction funds will be used in building the Buggs Island-Langley Field, Va., line approved on the last day of the 81st Congress by a narrow margin. Sepa also proposes two new transmission lines: Philpott-Appalachian and Clark Hill-Greenwood. Operation and maintenance expenses for which $150,000 was appropriated for the current year are estimated at $300,000 in the new fiscal year.

A sharp budget slash in loan funds for REA was accompanied by an implied warning against loans for generating and transmission. REA's electrification loan fund which has received an appropriation of $350 million plus an additional $150 million to be made available as needed in each of the past two years was dropped to a flat $100 million. Actual funds for electrification loans will be approximately $220 million during 1952, however, because of carry-over from previous fiscal years.

Shortages of aluminum, copper and electronic equipment "make it necessary to proceed more slowly with both the electrification and telephone programs," the President declared in his budget message, adding, "The reduction in new loan authorization will permit improvement and expansion of existing distribution capacity where essential, but will require some curtailment of loans for new facilities."

Telephone loan funds were clipped from $32.5 million during the current fiscal year to $9 million in the budget estimates. Despite the big decline in loan funds, REA is asking $8.5 million for salaries and expenses, only $50,000 less than current appropriations.

Although water programs of the Bureau of Reclamation and Corps of Engineers are down more than $100 million from the current year's program, the new estimates show no drop in power project spending is planned by these agencies.

Of $149.4 million requested for Corps rivers and harbors construction in fiscal '52, 62% will go to five hydroelectric projects: McNary, Chief Joseph and the Dalles Dams on the Columbia; Jim Woodruff on the Apalachicola River in Florida; and Old Hickory. McNary, where first power now is expected to go on the line in December, 1953, will get $42.9

million during the coming fiscal year, under the Corps estimates.

About half of the Corps' $312.7 million proposed flood control construction fund is being requested for eight power projects: Bull Shoals in Missouri and Arkansas; Clark Hill, Ga., and South Carolina; Albeni Falls, Idaho; Buggs Island, Va.; Garrison, North Dakota; Detroit, Ore.; Lookout Point, Ore.; and Fort Randall, South Dakota. Largest project appropriations are in the Missouri Basin where Garrison is allotted $37 million and Fort Randall, $34.7 million.

Approximately 73% of Reclamation's $224 million construction fund is planned for five projects which include power development: Hungry Horse, $23 million; Columbia Basin, including installation of final power units at Grand Coulee Dam, $27.9 million; Colorado-Big Thompson, $19.3 million; Central Valley, $38 million; and Missouri River Basin, $59 million, including more than $18.7 million for transmission line construction. A 230-kv transmission line between Central Valley and Bonneville's power system is included in the Central Valley program for fiscal '52.

TVA plans to spend more than $266 million for construction in fiscal '52, with all but $25 million to be supplied by new appropriations. Construction work on three dams, 10 hydro generating units and a total of 22 steam units at five plants are included in this program. Total appropriation sought by TVA for the coming year is $248,568,000, compared with the current year's appropriations of only $131,214,000.

Another major federal power expansion is planned by Bonneville Power Administration which will step up its transmission line construction program from $39.5 million to $69.5 million in fiscal '52. A supplemental appropriation also will be sought after July 1 for $2,450,000 to speed transmission facility construction now under way.

Southwestern Power Administration is asking for $5.4 million.

WILLIAM R. HEROD, president of International General Electric Co., has been made Coordinator of Military Production for the western Europe defense organization, it was announced in London

Commercial Building Ban Is in Effect Until Feb. 15

A freeze order has virtually stopped all commercial building until Feb. 15. By then the National Production Authority will have controls staffs operating in the 14 regional offices of the Commerce Department.

These local offices will issue permits for such jobs as can go forward. If a builder goes ahead without a license, both he and the property owner are liable to fine or imprisonment or both, as stipulated in the original M-4 order of Oct. 26, 1950, banning amusement construction. Aside from legal penalties violators run the risk of not being able to complete their building jobs.

Effective at midnight Jan. 13 even jobs already started cannot proceed unless a substantial quantity of material has been used. The requirement was adopted to shut off builders who had hurried to break ground to beat the order.

NPA has established a general rule that up to Feb. 15 it will grant authorizations to start or continue construction only in emergency cases. Where ground has been broken, the agency cautions contractors and owners to be certain that construction has been legally started under terms of the order —before continuing. Where there is a doubt an application should be filed with NPA.

Applications by builders are to be submitted on NPA forms to Commerce Department regional offices in Boston, New York, Philadelphia, Cleveland, Chicago, Atlanta, St. Louis, Kansas City, Dallas, Minneapolis, Denver, Seattle, Los Angeles, and San Francisco.

Exempt from the order are supply facilities for food, fuel oil, gasoline, coal and gas distributing pipelines, as well as storage warehouses for manufacturers or processors. Alterations costing less than $5,000 in 12 months likewise need no permit.

Aimed strictly at commercial building, the order does not apply to schools, churches, hospitals, municipal construction or housing—either single-family or multiple-dwelling rental projects. Where an apartment building is to include stores or offices, however, it will be necessary to obtain authorization for the commercial portion.

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Newcomen Medal Given

The Newcomen Medal "for achievement in the field of steam" was awarded to Issac Harter, chairman of the Board of Babcox & Wilcox Tube Co, Beaver Falls, Pa., at a joint meeting of the Newcomen Society and the Franklin Institute in honor of Benjamin Franklin's birthday. Harter is the second winner of the medal.

Index Is Available

Electrical World's semi-annual index has been prepared and copies are now available upon request. It may be obtained without charge. Address requests to Electrical World, Editorial Office, 330 W. 42nd Street, New York 18, N. Y.

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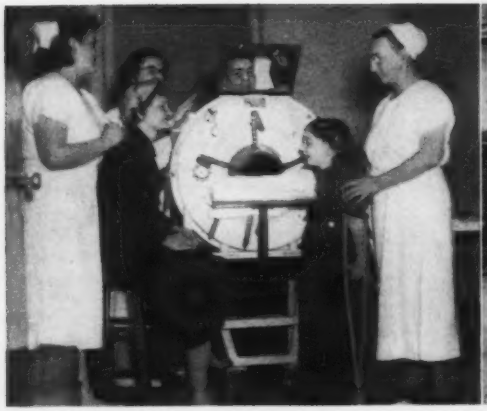

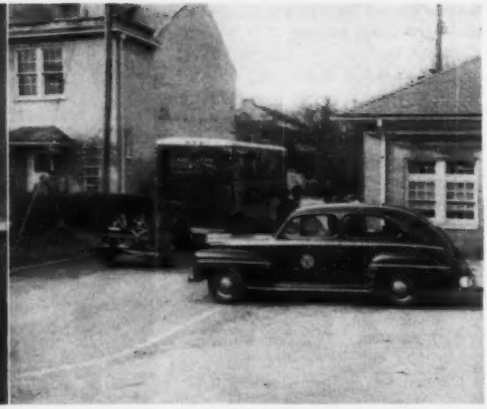

ABOUT TO BEGIN his difficult journey to Baltimore Children's Hospital, 17-year-old, polio-stricken Thomas Fassnacht receives the good wishes of another young patient as nurses and the boy's mother look on. In right panel is a segment of the mercy caravan about to depart from Lancaster. Note the portable generators immediately following the van

3 Utilities Team Up to Aid 50-Mile, Iron Lung Journey of Polio Victim

Three power companies in two states teamed up on Jan. 9 to assure a 17-year-old polio victim a safe journey in his iron lung from Lancaster, Pa., to Baltimore, Md., 50 miles away. Pennsylvania Power & Light Co, Conowingo Power Co, Elkton, Md., and Consolidated Gas, Electric Light & Power Co of Baltimore played the leading roles.

Thomas Fassnacht had been in an iron lung at Lancaster General Hospital since October. But his physician said that he would have to be moved to Children's Hospital, Baltimore, for long-range treatment and possible rehabilitation.

It was no easy matter to move the youth. He is so severely afflicted that doctors believe that he could live no more than a few minutes in a portable lung, the ordinary device used to transport polio sufferers.

Pennsylvania Power & Light Co was called upon for assistance. After a careful examination of all problems involved in the undertaking, company engineers concluded that with elaborate and precautionary planning the mission could be successfully carried out. Required equipment included a large, tractor-towed, moving-van trailer fitted to carry the patient, doctor, nurses, technicians, a reserve "lung", oxygen tank, portable respirator, and quantities of first aid equipment.

Attached to the van was a PP&L-furnished trailer. This carried two portable gas generators and accommodations for a mechanic to keep check on the generators' operations. Two linemen were assigned to keep a constant vigil.

Energy to the iron lung was delivered through a double-pole, double-throw switch, enabling power to be supplied from either generator. A 250-ft extension was also attached to be used by the linemen to connect to service wires along the road in the event of failure of both generators. Pilot lights were placed on the back of the van to indicate generator trouble, and walkie-talkie sets were used.

PP&L made arrangements with Conowingo Power and Consolidated to provide routing directions and escort the caravan through their service territories.

In all the journey took about five hours. There were five stops along the way because of trouble in one of the generators, and two additional stops were made for refueling purposes. Despite these unavoidable delays, the entire trip was made with great calmness. By 3 pm Thomas Fassnacht was safely installed in Baltimore Children's Hospital.

Utility-Reclamation Pact for 'Wheeling' Power OK'd

A new transmission service contract between Montana Power Co and the Bureau of Reclamation was approved Jan. 12 by Interior Secretary Oscar L. Chapman.

The company will deliver federal power from Fort Peck and Missouri River Basin projects to federal preference customers under a four-part transmission fee schedule. Similar arrangements for delivery of company power over federal lines are also provided in the contract. Transmission fees will be based on distances from delivery points. Fee for delivery in zone 1, within 50 miles of a delivery point, will be 1 mill; zone 2, 50-100 miles, 2 mills; zone 3, 100-150 miles, 3 mills; and zone 4, more than 150 miles, 4 mills.

Delivery to federal customers will be made only at points on company transmission lines rated at 25 kv or higher.

The new contract will remain in effect through 1960 and thereafter until terminated upon three years' notice, except that it will be automatically terminated after Dec. 31, 1970.

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Utility Franchise Denied

Citizens of Dry Prong, La., voted down a 25-year franchise for the Central Louisiana Electric Co.

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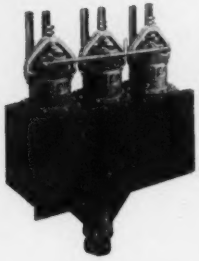
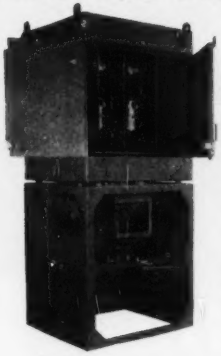


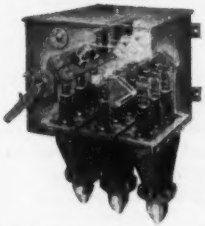
Type "FCBX" Fuse-Switch Boxes with gang-operated oil fuse cutouts mounted on cable connection compartments are rated 2500, 5000, and 8000 volts with interrupting capacities of 6000, 6000, and 3750 amperes (RMS per phase) respectively. When used within the limits of their short circuit interrupting capacity, Type "FCBX" units have wide application as primary disconnecting and protecting equipment at load distribution centers or at main sub-stations of small plants.

PROTECT AND DISCONNECT LARGER LOADS



Type "RA-SC" Fuse-Switch units with Type "RA" load break oil switches and Type "SM" power fuses are rated 7,500 and 15,000 volts with interrupting capacities of up to 30,000 amperes RMS. Continuous current carrying capacity of units and load break rating of switches is 400 amperes. A fused load can be supplied from either of two feeders through a double throw "RA" switch and the unit may be equipped with a G & W automatic transfer mechanism to assure service continuity if the normal feeder fails.

LOAD BREAK OIL SWITCHES



Type "RA" load break oil switches are made in any switching arrangement necessary to meet individual distribution problems. 7,500, 15,000, and 23,000 volt units with full 400 ampere load break are widely used in single and double throw units or in special units with two or more sets of links.

G & W engineers or engineering representatives will be glad to help you select the proper G & W equipment for your problem whether it requires a single unit or a complete primary distribution system.

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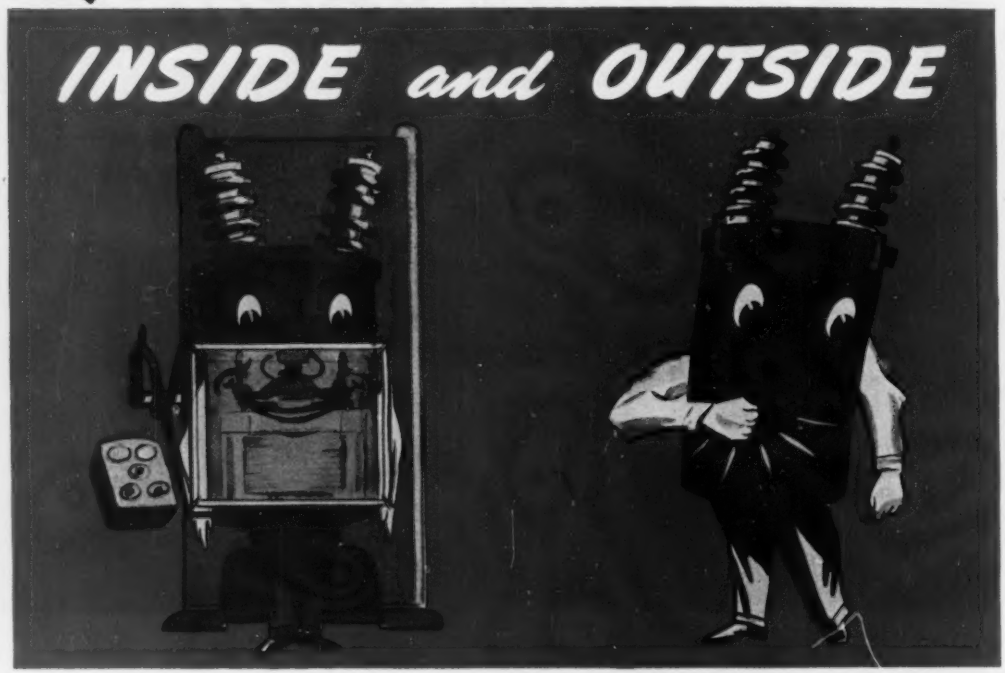

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AMONG THOSE PRESENT at General Electric Co and Western Massachusetts Electric Co's Industrial Power Application Conference, Springfield, Mass. were, left to right, C. E. Blumenauer, U. S. Rubber Co; G. C. Jamison, Western Massachusetts Electric; and J. N. Alberti of GE's Springfield division. In lower panel are, left to right, Howard J. Caldwell, president of Western Massachusetts Electric, a speaker; F. M. Roberts, manager of GE's industrial engineering divisions, also a speaker; and J. M. Turnbull, Western Massachusetts Electric, conference chairman

Utility—Manufacturer Cooperation Stressed at Industrial Power Parley

The growing need for increased cooperation between power companies and manufacturers was stressed at the Industrial Power Application Conference, held by General Electric Co and Western Massachusetts Electric Co at Springfield, Mass., Jan. 10. Attendance was about 100.

John M. Turnbull, area development director for Western Massachusetts Electric, was chairman. Various specialists from GE discussed latest industrial applications in electric heating, controls, motorization, materials handling, lighting, and industrial electronics. An exhibit was devoted completely to advanced equipment.

Howard J. Cadwell, president of Western Massachusetts Electric, emphasized the challenge placed upon production as a result of mobilization and inflation. He called attention to the fact that since V-J Day New England utility generating capacity has increased 43% and should reach 64% by 1954. Cadwell also stated that Western Massachusetts' industrial power sales on an annual basis are now over 470 million kwhr against 210 million a decade ago. Increased industrial production is the basic weapon in combating inflation and building toward a war economy, and utility part in this attack is vital to its success, he said.

F. M. Roberts, manager of GE's industrial divisions, advocated the following approach toward realizing greater production goals: (1) Conserve manpower, (2) reduce waste, (3) cut costs, (4) improve quality of materials, products, and services.

GE Improves Efficiency

Roberts noted progress toward these objectives in GE as he cited a case where investment of $5,500 in industrial electric trucks and pallets yielded an annual saving of $2,500 and made it unnecessary to expend $175,000 in new building construction. Twenty per cent more space in the existing plant was realized by this method. He also stated that advances in instrumentation have taken place to benefit every branch of manufacturing and indicated that instruments for high-speed measurements of thickness are now in use, having the range to measure anything from thin films to steel shafts. Color control in printing at speeds up to 1,500 ft per minute and automatic registration of material in process have attained great progress, he said. Roberts cited a decrease in waste from 30% to 3% in one printing installation by electrical methods.

War Work Growing

C. E. H. Palmer, New England district manager for GE, said that the company's direct war work totaled about 22% of its production in 1950 and would reach 30% to 35% in 1951. Material price levels in December reached a high of 92.4% over 1941, and severe shortages of raw materials focus attention on priority needs, Palmer stated. He commended the electric utilities for their expansion accomplishments, and for the 19 weekly energy production records broken during 1950.

He further stated that a national peak load of 58 million kw is expected for 1951, with production of 330 billion kwhr. GE anticipates building 10 million kw in generating units through 1953. More than 30 factories in New England alone will employ 60,000 workers.

There were also detailed presentations of economic applications of elec-

tric service to industry, with O. D. Oksanen, heating specialist; W. Hansen, control specialist; L. S. Cooke, lighting engineer; L. T. Jester, application engineer; J. W. Rogers, power drive specialist; and O. J. Schopp, special products engineer, taking part. All of these participants were from GE.

•

Pacific Northwest Could Supply Extra Million Kw

To meet the defense emergency 1 million kw of additional power could be made available in the Pacific Northwest within the next three years. This was the finding of a Bonneville Power Administration survey made at the request of the Defense Power Administration.

Sol E. Schultz, Bonneville chief engineer, disclosing survey results in a speech before the Portland, Ore., section of AIEE, said that of this 1 million kw, about half could come from non-federal hydro projects. This would include 120,000 kw from the Puget Sound Power & Light Co's Rock Island Development, 40,000 kw from Box Canyon Dam of Pend Oreille County PUD, 100,000 kw from the Cabinet Gorge project of Washington Water Power Co., 40,000 kw from Portland General Electric Co's Pelton Dam, and 160,000 kw from the City of Tacoma's Cowlitz River development. Observers believe all of these non-federal projects could be completed within two years if needed.

Schultz said the report included an interconnection with the California Power Grid to add 100,000 kw to the northwest supply. He pointed out that a 230-kv line is now under construction to bring Columbia River Power as far south as Klamath Falls, Ore., and that this could be extended to Shasta Dam. Series capacitors would be used to minimize transmission losses.

The report indicated that if defense loads became heavy enough the federal government might take advantage of the situation to construct three 100,000-kw steam plants. Locations recommended for these were Coos Bay, Ore., and Longview and Bremerton, Wash. These plants would firm up present interruptible power and could show substantial transmission benefits.

FEDERAL WATER POWER can be attractive, especially as it is depicted in "Bless You All." In the musical at the Mark Hellinger Theatre in New York City Jules Munshin plays a 1960 Presidential candidate who conducts his election campaign by television. He sums up the main points of his platform with living pictures, in this case Miss Federal Water Power, Gwenno Lee Smith

Skina Named to Head DPA Construction Expediting

Ansbert G. Skina, Idaho electrical engineer who directed the rebuilding of the West Berlin power plant during the American airlift into Germany, has been appointed chief of the Construction Expediting Branch of the Defense Power Administration.

A native of Wallace, Idaho, Skina is a graduate of the University of Idaho. He served as an electrical engineer with the Bunker Hill & Sullivan Mining & Concreting Co, Kellogg, Idaho, for seven years until he was called to active duty with the army in 1942. During the war, Skina served as a major in the signal corps in the U. S. and European theaters. In September, 1947, he was transferred to the Public Utilities Branch of the Office of Military Government in Germany.

In November, 1948, Skina was assigned the task of rebuilding the 100,000-kw "Berlin-West" power plant which had been stripped by the Russians. Equipment for the project had to be flown in during the Russian blockade. The plant was reconstructed in a year, some six months ahead of the original target date.

Skina went to the Department of Interior last September and helped organize the Defense Power Administration.

•

1,937-Mw Peak Reached Jan. 8 at Grand Coulee

An instantaneous peak of 1,937,000 kw was reached at Grand Coulee Dam on Jan. 8, claimed by the Bureau of Reclamation to be the greatest generation of hydro energy from one place in the history of the world.

On the same day the dam's power plant broke an hourly record for power production—1,905,000 kwhr at 6 pm.

Two production records were set in December—a 24-hr output record of 41,231,000 kwhr on Dec. 30, and a monthly output of 1,103,748,000 kwhr.

Grand Coulee has fifteen of an ultimate eighteen 108,000-kw generators in operation. The remaining three units are scheduled for completion this year. Two 10,000-kw town service units also deliver power to the dam area, with a third 10,000-kw unit expected to go into service shortly.

•

Will Double Capacities

Kentucky Utilities Co will spend more than $20 million in the next three years to double the size of its two largest coal-fired generating plants. The Public Service Commission is being asked for a certificate of convenience and necessity in order that work might be started immediately on expansion of the Tyrone Plant in Woodford County. Tentative plans call for the Tyrone addition to go into operation in the latter part of 1952. The company's Green River Plant, near Central City, had a second 35,000-kw unit placed in operation last January, and it is expected that the capacity of this plant will be doubled by the end of 1953.

293 EMPLOYEES of Arkansas Power & Light Co who had completed five-year periods of continued service held their annual service emblem awards party in Little Rock and visited Gov Sid McMath to present him with a pledge of adequate power for their state. E. G. Barry, left, is shown presenting the pledge to Governor McMath

Governor Asks State, Standby Steam Plants

State construction of standby steam-power generating plants, to assure adequate power supplies when insufficient rainfall limits hydroelectric output, has been suggested to the Washington state legislature by Gov Arthur B. Langlie.

The state would not retail the energy but would transmit it to load centers and act as coordinator to aid PUD's, municipalities, and private power companies, under the Langlie suggestion. Cost would be met either by a tax on power consumers or out of profits from the marketing of energy by the State Power Commission, created by the 1949 legislature in an act whose legality has just been upheld by the State Supreme Court. Surplus energy might be purchased from the Bonneville Power Administration and re-sold at a profit by being combined with steam-generated energy.

Langlie believes the plants could raise the minimum guaranteed output of electric energy in the state by 200,000 kw, enabling public and private producers to guarantee a constant year-around output. At least two plants would be required, their construction to be financed by revenue bonds for whose authorization enabling legislation is being drafted.

Langlie said representatives of public and private-power distributors with whom he had discussed the program believe it to be feasible. The Speaker of the House, however, described the proposal as "One of the most socialistic advanced in this state in years."

Proposed construction of steam power plants has come up for an increasing amount of discussion in Washington State during the last year. Steam-generated energy cannot compete with the hydroelectric energy of plants now in operation or under construction but some authorities believe increasing cost of hydroelectric projects now being contemplated would make steam plants competitive. Oil probably would be used for fuel although coal deposits of the state also have been studied.

•

Education in Lighting

"Living With Light," a new program of educational materials for teaching about light and sight in junior high schools, has been released by the Better Light Better Sight Bureau. Featured in the materials is a series of three film strips. "The World of Light" explains the basic relationship between light and sight; "How to Be Bright" illustrates sharp lighting contrasts and resulting handicaps to comfortable seeing. The third film strip, "Light in the Working World," shows some of the research into light and sight that has contributed to easier seeing. It emphasizes the proper use of light both at work and at play.

•

Washington Utility Gets Cabinet Gorge License

The Federal Power Commission has issued a 50-year license to Washington Water Power Co for construction and operation of the 200,000-kw Cabinet Gorge project on the Clark River in Idaho and Montana.

The FPC order authorizing the license provides that construction of the $40-million project is to begin by March 1. Three 50,000-kw units are scheduled to be installed by the end of 1952, with plans calling for a fourth 50,000-kw unit at a later date. A 230-kv transmission line will connect the new plant with the company's system at Spokane.

The new private hydroelectric project will include a reinforced concrete dam creating a reservoir 20-mi long and covering about 2,700 acres.

•

115-Kv Line Is Planned

Northern Arizona Light & Power Co will construct a 115-kv transmission line which will carry energy from Davis Dam. The 80-mi line will run from Prescott to Flagstaff in northern Arizona.

•

'Electric Energy' Okayed

The Electric Energy, Inc, power project in Kentucky (EW, Dec 25 p 11) has received Securities and Exchange Commission authorization. A new company will be organized to build a $70-million generating station to supply a new atomic energy project at Paducah, Ky. Participating utilities are Central Illinois Public Service Co, Illinois Power Co, Kentucky Utilities Co, Union Electric Co of Missouri, and Middle South Utilities, Inc.

•

Elevated in State PSC

Governor-elect Gordon Persons of Alabama has appointed John Owen as president of the Public Service Commission and T. O. Walker to succeed Owen as associate commissioner.

YIELDS (%) — Operating Electric Utility Securities

Quality	Bonds			Preferred Stocks			Common Stocks		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
DATE 1950									
Jan. 11	2.64	2.67	2.76	3.83	4.09	4.50	5.63	6.30	7.80
Jan. 4	2.64	2.67	2.77	3.84	4.09	4.50	5.67	6.45	7.29
END OF QTR.									
4th 1950	2.65	2.67	2.78	3.86	4.14	4.51	5.80	6.54	7.44
3rd 1950	2.66	2.67	2.76	3.81	4.08	4.46	5.70	6.54	7.25
2nd 1950	2.68	2.66	2.74	3.79	4.03	4.38	5.38	6.51	7.50
1st 1950	2.59	2.61	2.74	3.78	4.01	4.36	5.22	5.85	6.67

Data: Reis & Chandler, Inc.

SEC Can Hold Warrants Worthless, Court Rules

The Securities and Exchange Commission has the power under the Public Utility Holding Company Act to deny participation in a utility reorganization to holders of any security whose value it considers too small to be recognized.

This was the United States Supreme Court's ruling last week in a case involving reorganization of the old Niagara Hudson Power Corp. The same question is at issue in connection with reorganizations of several major holding companies, among them Commonwealth & Southern Corp, American & Foreign Power Co, and United Corp. A case involving Commonwealth & Southern warrantholders has been appealed to the high court.

By a 6 to 2 majority the Supreme Court approved that part of the Niagara Hudson reorganization plan that gave no participation in the assets of the reorganized company, Niagara Mohawk Power Corp, to holders of Class B stock option warrants. SEC had excluded them on the grounds that the value of the new common stock never, in SEC's opinion, would reach the price at which the options could be exercised. Therefore, said the commission, the options had no measurable "investment value" though they had a market value.

The Second Circuit Court of Appeals had reversed this decision. Judge Learned Hand said the commission might be correct in its forecast of earnings but the fact that the warrants sold on the market at more than a nominal price showed they had some recognizable value.

The Supreme Court opinion said, "In the absence of abuse of its discretion, the commission's approval of a plan is as lawful and binding when it recognizes a value of zero for a security as when it selects any other figure. . . We conclude that in the present instance the act does not require proof that the warrants are wholly worthless and without all market value in order to sustain the commission's judgment that the plan is fair and equitable when it denies participation to them."

The dissenting justices, Felix Frankfurter and Hugo Black, said they would "take another look" at the case for the reasons indicated in Judge Hand's opinion.

•

Contract for Line Sale in Oklahoma Held Void

A contract between the city of Pryor, Okla., and Public Service Co of Oklahoma for purchase of the latter's electric distribution lines has been held illegal by the district court in Pryor.[9] However, the $245,000 bond issue the city voted Oct. 10 (EW, Nov 6, p 78) for the purpose was upheld.

The contract was made in September before the city had funds in hand and this is contrary to Oklahoma law, the judge ruled. The city had planned to use $180,000 of the bond receipts plus a $100,000 gift from W. A. Graham, Pryor banker, to buy the lines. City officials reported they would go ahead with plans to build their own system and duplicate Public Service lines though they said they were willing to meet officers of the utility at any time to negotiate a new contract. Public Service now has no franchise to serve Pryor.

FINANCIAL BRIEFS

A Public Service Commission order reducing Georgia Power & Light Co's rates about 10% (EW, Dec. 18, p 76) became effective Jan. 1 although a rehearing will be held Jan. 25. The commission said it is reopening the case to let Georgia P&L present additional evidence that rising costs make a reduction undesirable at this time.

Dallas Power & Light Co is asking Dallas City Council permission for an 11% increase in rates. George L. MacGregor, president, said the company may need an overall boost of 16% during the next three years to make its authorized return of 7%. This is the first rate increase asked by the company in 30 years. Rates have been cut 12 times in that period.

New England Power Co, Boston, has been denied a request for reconsideration of a Federal Power Commission order suspending a proposed schedule of charges to Granite State Electric Co, Lebanon, N. H. FPC said the new rates would increase the latter company's costs $60,800 a year, or 46.6%. Both utilities are subsidiaries of New England Electric System.

Kansas Power & Light Co has obtained a district court order restraining the city of Great Bend, Kan., from collecting a $10,000 annual license fee.

Electric Utility Financing—December 30-January 13

Company	Description	Amount of Offering (000)	Offering Price	Yield at Price to Public
Bonds				
Commonwealth Edison	s. f. debentures 2⅞% new money	$49,000	101.335%	2.825%

Exchange Offer

American Gas & Electric is offering to exchange 116,662 shares of its common stock for 162,030 shares of common stock of Central Ohio Light & Power on the basis of 0.72 shares of American for each share of Central Ohio. This exchange offer became effective Jan. 10 upon acceptance by holders of 81% of the common stock of Central Ohio Light & Power and expires Jan. 31.

SCHEDULED

Bonds—El Paso Electric, 1980 refunding and new money, $4.5 million.
Preferred Stock—San Diego Gas & Electric, 325,000 sh 4.40% $20-par new money, $6.8 million.

KYLE

TYPE "L" OIL CIRCUIT RECLOSER NOW GIVES YOU UP TO

6000 amps interrupting capacity

IN NEW 140-AMP RATING

First recloser actually engineered for heavy-duty service ... full power-class design ... 110 kv insulation impulse level ... ratings up to 140 amps ... only real heavy-duty recloser in its class

Kyle type "L" reclosers cost a little more than lighter-duty reclosers, but they're worth the difference in service, performance, convenience, and freedom from maintenance. Even if you don't need the extra interrupting capacity now, you will need it to take care of future loads; and in the meantime you enjoy all the benefits of type "L" performance and economy.

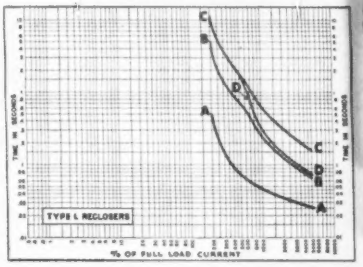
It's the Kyle oil cross-blast method of arc extinguishing, plus heavy-duty design, that makes it possible for the "L" to handle heavy fault currents up to 6000 amps.

The type "L" is the only recloser with so wide a choice of operating sequences. Four standard curves permit any sequence of operation to meet your coordination problems.

Sequence and coil changes are made right in the field—in a few minutes. To change to a coil of different rating, you just remove two screws. To change operating sequence, simply rotate a disc or change one small part. It's quick—and easy! Saves shop trips!

Extremely accurate; virtually no effect from ambient temperature changes. Positive fast operation; positive toggle closing—doesn't depend on gravity. Many safety features: cover and tank electrically dead—bushing tops only live parts; trip-free operating handle. Large sleet hood protects counter and operating handle; may be rotated in 90° steps. Rugged; shock-proof; trouble-free.

ONLY RECLOSER WITH 4 OPERATING CURVES



RATINGS

Coil Rating Amperes	Min. Trip Current Amperes	Maximum Interrupting Capacity Amperes At Maximum Phase-to-Phase Nominal Voltage of		
		4.8 kv	7.2 kv	14.4 kv
25	50	1500	1500	1500
35	70	2100	2100	2100
50	100	3000	3000	3000
70	140	4200	4000	3000
100	200	5000	4000	3000
140	280	6000	4000	3000

Read all about it!

Ask the L-M Field Engineer for a copy of Bulletin CR1A—on the type "L"; or write Line Material Company, Milwaukee 1, Wisconsin (a McGraw Electric Company Division).

18

LINE MATERIAL... Kyle Reclosers

Complete Coordinated Equipment for Distribution Today

SOUTHERN CALIFORNIA EDISON CO's Big Creek No. 4 hydro project on San Joaquin River includes concrete gravity dam, 250 ft high, 950 ft long, seen from tunnel opening

CONSTRUCTION of 84,000-kw plant i expected in May. Final installation will b

Still More Power for Big Cree

STACKING has begun on first two units. Because of high cost of excavating from solid granite, plant equipment will be put into space 25% smaller than usually required

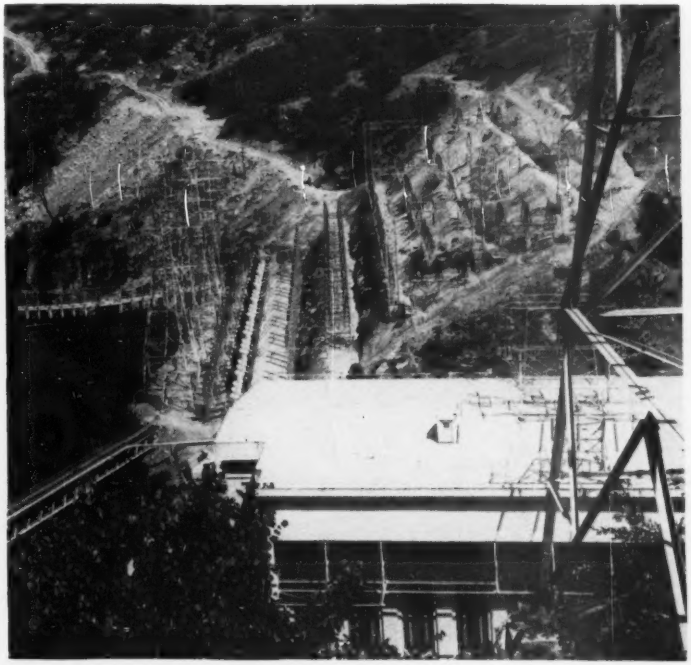
INCLUDED in project is modernization switchboards required 180,000 ft of co

lmost complete, with initial generation
Big Creek's total capacity to 514,000 kw

RECORDS toppled in drilling two tunnels which were bored through solid granite in 297 working days. Total length is 10,635 ft, and each one has a diameter of 24 ft

k Project

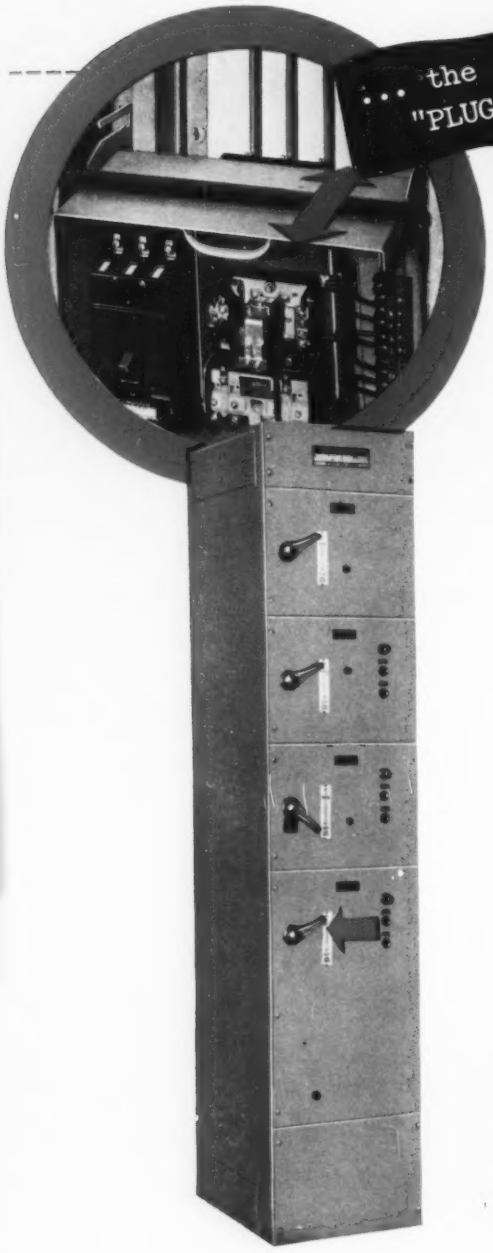
ig Creek 1 and 2. Installation of new
wiring for operation during conversion



IN MODERNIZATION of Big Creek 1 and 2 new switchyards with 3-cycle, 3.5-million kva, 220-kv oil circuit breakers were installed. Mountainside was benched at No. 2

YOU CAN BE **SURE**.. IF IT'S

Westinghouse



... the greatest advancement in "PLUG IN" control center design

"TILT POSITION" DISCONNECT

for unmatched safety

With the new Westinghouse Control Center you can be *sure* about safety . . . because it's *the safest control center ever built!*

This important advantage results largely from these two remarkable features:

"Tilt position" disconnect: Starter units may be withdrawn to a self-supporting "tilt position" which completely disconnects them from the power bus. It is physically impossible to reach the bus when the starter is in this position.

Safety interlocking handles prevent opening of the starter doors unless the circuit breaker is in the "Off" position. Starter doors may be "locked safe" with from one to three padlocks to prevent entrance by unauthorized personnel.

Consider all the advantages of this new control center!

New Magna-Grip "plug-in" connectors contribute to greater safety . . . and new operating convenience; standardized, modular dimensions for unmatched flexibility; a large vertical wiring trough for easier wiring and maintenance. These are random examples. The complete story is in Booklet B-4213. For your copy, write to Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa. J-21544

Westinghouse

CONTROL CENTERS

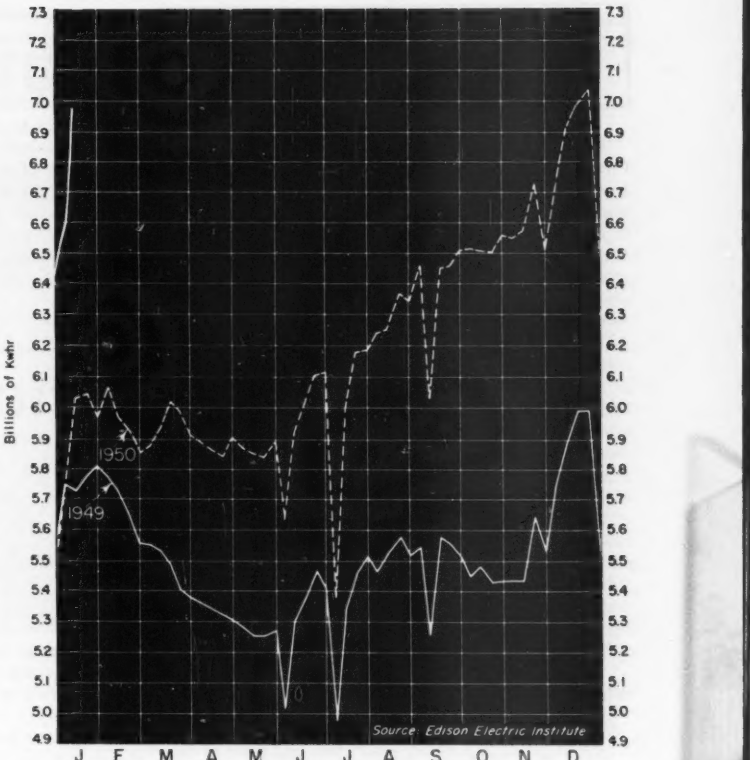
Output and Primary-Use Records Set in Canada

Canadian central stations last November set two more records. Output reached 4,447,423,000 kwhr to topple the record of 4,417,089,000 kwhr set in May 1950. Consumption of primary power reached 4,132,135,000 kwhr to replace the month-old record of 4,092,126,000 kwhr.

Further strengthening of Canadian utilities as new capacity came on the line was indicated by increasing exports of energy to the United States. Gross exports to the United States for the first 11 months of 1950 totaled 1,747,785,000 kwhr, more than was exported in 1948 and almost as much as in 1949.

The following statistics supplied by the Dominion Bureau of Statistics are in thousands of kilowatthours:

Period	1950	1949
Eleven Month's Output	46,133,413	42,633,419
Primary	43,159,645	39,616,455
Secondary	2,973,768	3,016,964
Primary Consumption	41,748,884	38,355,686
Net Exports to U. S.	1,746,592	1,626,322
November Output	4,447,423	3,914,482
Primary	4,256,499	3,714,654
Secondary	190,924	199,828
Primary Consumption	4,132,135	3,629,358
Net Exports to U. S.	143,378	95,249
October Output	4,384,531	3,975,153
Primary	4,223,841	3,734,711
Secondary	160,690	240,442
Primary Consumption	4,092,126	3,627,613
Net Exports to U. S.	139,509	119,475



Gets PSC Appointment

Henry McKay Cary has been appointed to the Missouri Public Service Commission by Governor Forrest Smith. Cary had been an examiner in the commission's legal department since 1941. He succeeds John P. Randolph, who resigned to become general counsel for NARUC.

Output Week Ended Jan. 13—6,980,845,000 Kwhr

Weekly Output, Millions Kwhr

1951	1950	1949
Jan 13 6,981	Jan 14 6,029	Jan 15 5,727
Jan 6 6,602	Jan 7 5,695	Jan 8 5,742
1950	1949	1948
Dec 30 6,479	Dec 31 5,493	Jan 1 5,562
Dec 23 7,033	Dec 24 5,994	Dec 25 5,508
Dec 16 6,985	Dec 17 5,997	Dec 18 5,790
Dec 9 6,909	Dec 10 5,881	Dec 11 5,705
Dec 2 6,716	Dec 3 5,743	Dec 4 5,646
Nov 25 6,508	Nov 26 5,537	Nov 27 5,349
Nov 18 6,728	Nov 19 5,644	Nov 20 5,627
Nov 11 6,574	Nov 12 5,435	Nov 13 5,571

Percent Change from Previous Year

	Jan 13	Jan 6	Dec 30
New England	+11.9	+13.0	+17.9
Mid-Atlantic	+14.6	+15.5	+18.2
Central Industrial	+16.9	+16.2	+18.7
West Central	+13.2	+13.4	+12.9
Southeast	+25.1	+25.1	+23.0
South Central	+18.8	+19.6	+19.9
Rocky Mountain	+ 8.4	+ 8.5	+12.4
Pacific Coast	+ 8.8	+ 8.6	+13.6
Total United States	+15.8	+15.9	+18.0

MEETINGS

American Institute of Electrical Engineers
Winter General Meeting, Hotel Statler, New York, January 22-26; District No. 4 Meeting, McFadden-Deauville Hotel, Miami, Fla., April 11-13.

National Rural Electric Cooperative Association
Annual Meeting, Cleveland Municipal Auditorium, Cleveland, Ohio, January 29-February 1.

★**Pennsylvania Electric Association**
Transmission and Distribution Committee, William Penn Hotel, Pittsburgh, February 1-2; Hydraulic Power Committee, Benjamin Franklin Hotel, Philadelphia, February 8-9; Systems Operation Committee, Robert Treat Hotel, Newark, N. J., February 8-9; Electrical Equipment Committee, Hotel Emerson, Baltimore, Md., March 1-2; Prime Movers Committee, Berkshire Hotel, Reading, Pa., March 8-9.

Missouri Valley Electric Association
Industrial and Commercial Sales Conference, President Hotel, Kansas City, Missouri, February 8-9; Engineering Conference, President Hotel, Kansas City, Mo., April 4-6.

Edison Electric Institute
Electrical Equipment Committee, Hotel Cleveland, Cleveland, Ohio, February 12-13; Transmission and Distribution Committee, Atlanta Biltmore Hotel, Atlanta, Ga., February 15-16; Annual Sales Conference, Edgewater Beach Hotel, Chicago, Ill., April 2-5.

Adequate Wiring Bureau
Annual Conference, Sheraton-Gibson Hotel, Cincinnati, Ohio, February 15-16.

Public Utility Buyers' Group of the National Association of Purchasing Agents
Mid-winter Conference, William Penn Hotel, Pittsburgh, Pa., February 18-20.

North Central Electrical Association
Electrical Industries Convention, Nicollet Hotel, Minneapolis, February 25-28.

★**American Society for Testing Materials**
Spring Meeting, Netherland Plaza Hotel, Cincinnati, Ohio. March 5-9.

National Electrical Manufacturers Association
Annual Meeting, Edgewater Beach Hotel, Chicago, Ill., March 12-15.

National Association of Corrosion Engineers
Conference and Exhibition, Hotel Statler, New York, March 13-16.

Protective Relay Engineers
Annual Conference, Agricultural & Mechanical College of Texas, College Station, Texas, March 26-28.

Oklahoma Utilities Association
Annual Convention, Mayo Hotel, Tulsa, Oklahoma, March 29-30.

★**Southeastern Electric Exchange**
Engineering and Operation Section, Vinoy Park Hotel, St. Petersburg, Fla., March 29-30; Annual Conference, Boca Raton, Fla., April 11-13.

American Society of Mechanical Engineers
Spring Meeting, Atlanta Biltmore Hotel, Atlanta, Ga., April 2-5.

Electric Association of Chicago
Industrial Electrical Exposition, Sherman Hotel, Chicago, Ill., April 2-7.

Northwest Electric Light & Power Association
Engineering Section, Hotel Utah, Salt Lake City, Utah, April 25-27.

★ Addition This Week

IN THE INDUSTRY

FISCHER BLACK

The meeting of the American Economic Association in Chicago during the last week of December received much less notice in the press than it deserved. We should hearken to the wise sayings of the gentlemen contributing to the economic education of our youth. So your attention is called to the profound statements made at the meeting relating to the electric utility business and the economists' views on the question of private ownership and tax exemption. Perhaps you will be surprised.

Only two professors of those whose opinions are available seem to be out of step with economic fundamentals of the industry. Prof. Horace M. Gray of University of Illinois claimed that the physical systems of the utilities were inadequately integrated. As a solution he proposes coercive power in the hands of the Federal Power Commission or substitution of public power. This argument was well handled by Prof. D. G. Tyndall of Carnegie Institute of Technology. He pointed out that Gray could find only one enthusiastic supporter, "that redoubtable exponent of public power, Dr John Bauer." Tyndall quoted numerous references to disprove the claim and ended up by saying that, "Wherever possible, the automatic forces of the market should be used rather than the all-too-lively hand of federal regulation."

What Makes Rates Low?

Prof. Woody Thompson of State University of Iowa compared public and private utility bills and those of different states. Although his paper is not immediately at hand, he apparently concluded that states with active commissions had lower electric rates. He also attached some importance to the fact that municipal utility rates averaged lower in his test states than private power rates. In discussing this paper Prof. Erwin E. Nemmers of Marquette University pointed out that Wisconsin's rates were low, not because of regulation but, "because of a little known but very significant fact: the tremendous development of the Wisconsin River as a small, private TVA." Nemmers also went to considerable length to show Thompson that taxes have some affect upon the price of the kilowatt hour.

Harry G. Guthmann of Northwestern University discussed competition from tax-exempt business. He suggested that municipal utilities be obliged to pay an amount equal to the federal corporate income tax and that their bond interest should be subject to tax. It was pointed out that the municipals could still avoid the income tax by passing savings along to the customers in reduced rates. He also suggested the possibility of an excise tax for all utilities in place of the income tax.

Tennessee and TVA

B. U. Ratchford of Duke discussed river valley development. He presented a very clear picture of the fallacies in arguments for federal basin-wide developments. Tennessee versus nine other Southern states from 1929 to 1949 was used as one example. Considering population, income payments, production workers, wages paid, value added by manufacturers, bank resources, and retail sales, he secured an index number of 196 for Tennessee, 206 for the other Southern states, and 137 for the United States. Ratchford concluded that "there is nothing in these figures to indicate that the TVA has been a major factor in affecting the economic activity of the state in which most of its activities have been centered."

Perhaps the university presidents mentioned in the last "In The Industry" column are not in touch with current economic thinking in the universities. A trip back to the classroom might be a revelation to them as it has been to us.

TECHNICAL NOTES

ARCHER E. KNOWLTON

Radar echo from precipitation seems to vary as the sum of the 6th powers of the diameters of the droplets.

Arc furnace swings are likely to happen more frequently in the case of a single furnace than simultaneously for a battery of several.

Electric furnaces have grown to 18,750 kva for a single set of electrodes because they are more than competitive with open hearth for high-grade steel.

Electric house heating takes from 1/4 to 1/3 kwhr per degree day per 1,000 cu ft, the higher value for larger houses or poorer insulation.

Mutual induction between circuits of different voltages on congested right-of-ways warrants serious consideration in plans for relaying.

Reheat at a net added cost of $525,000 for a 60-Mw unit saves 8.9% of the fuel used by a comparable non-reheat unit operating at 1,250 psi and 950 F; annual net after fixed charge deduction should be better than $85,000.

Control is applied to one in three capacitor installations; half the control is manual, one-third is voltage and one-tenth time-switch control.

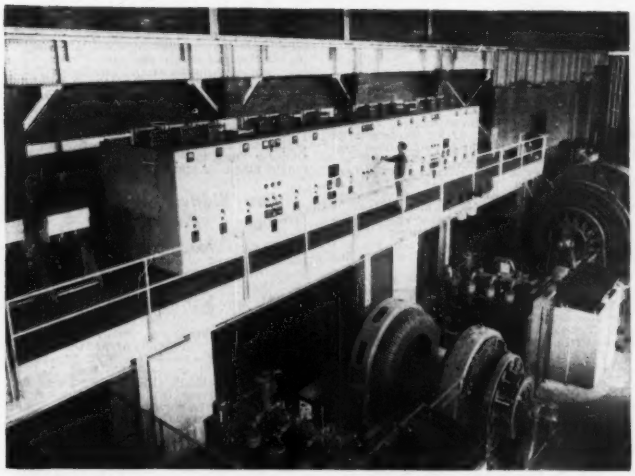
Lightning protection is applied by four out of five companies to their capacitor installations.

Conservators are disadvantageous in that: (a) They usually enter the normal clearance areas and (b) they add to the head in case of oil leak and fire; they may yield to other methods of preserving oil quality.

Capacitor installations on the average amount nationally to 10% (in kvar) of the respective system demands (in kw).

Load forecasting errors rise in importance when reserves (particularly spinning) become more and more stringent.

MANUFACTURERS and MARKETS



IN SERVICE in blooming-mill motor room of Jones & Laughlin Steel Corp's Otis Works at Cleveland is General Electric Co's largest metal-enclosed drawout switchgear for heavy-duty dc service. It is installed on the platform (center)

Shortages Rack Makers of Lighting Equipment

Shortages of various materials have given manufacturers of lighting equipment new headaches. Remedies are not easy to find; often they must come from the National Production Authority or some other government agency still just getting into operation.

Steel, aluminum, and ballasts are major problems, according to a number of lighting manufacturers. Steel is available from normal supply sources only for DO-rated orders. With a rating the manufacturer can get almost any quantity for about 5¢ a lb. Without a rating he must go to the black market, where prices range from 15 to 25¢ a lb. Purchases have been made from lawyers, insurance salesmen, laundry owners.

Current price of aluminum at the warehouse is about 30¢ in any except very large purchases. With a DO it is available at this standard price in any quantity for immediate delivery. Black market prices are about double —55¢ to 60¢ a lb.

No manufacturer of ballasts will promise delivery under six months for non-rated orders. DO's can be filled immediately, in almost any quantity. Prices of ballasts and other components are being quoted at "prevailing price at time of delivery."

Some lighting manufacturers are quoting Nov 30 prices as a base, plus increases made necessary by higher material or labor costs by the time delivery is made. If the customer balks at the final price, the fixtures normally can be sold to someone else the same day.

Where possible, manufacturers are trying to find substitutes for scarce materials. One reported he now can produce an 8-ft-long slimline unit containing only 3 lb 5 oz of steel and with no aluminum or copper except in ballasts.

Metal Prices
Jan. 15, 1951

COPPER, Conn. V., lb	$ .24½
LEAD, N. Y., lb	.17
ZINC, prime Western, E. St. Louis, lb	.17½
TIN, Straits qual, N. Y., lb	1.75
ALUMINUM, ingot, base price	.19
NICKEL, base price	.50½
STEEL, billets, Pitts., ton	56.00
STEEL, scrap, No. 1 heavy, Pitts., ton	46.50

GE Builds Its Largest DC Drawout Switchgear

The largest metal-enclosed drawout switchgear for heavy-duty dc service ever built by General Electric Co has been installed in the blooming-mill motor room of Jones & Laughlin Steel Corp's Otis Works at Cleveland.

The switchgear consists of 18 breaker and control units that control two 1,000-kw 250-v ignitron rectifiers, a 1,500-kw 250-v motor-generator set, and 12 automatic reclosing feeder circuits. In addition to the heavy-duty dc breakers in the rectifier cathode circuits, the installation includes high-speed metal-enclosed drawout anode circuit breakers for the rectifiers located in separate adjacent structures.

GE's Switchgear Divisions only recently extended its line of metal-enclosed switchgear to the field of heavy-duty dc service in large industrial establishments and large dc traction substations. The new line is built for use on 250- and 600-v dc systems in ratings up to 8,000 amps.

•

Alcan Gets Water Rights for BC Hydro Project

An agreement that will lead to a $500-million project for making aluminum in British Columbia has been signed by the provincial government and Aluminum Co of Canada.

The company has received water-power rights for a 1.5-million-hp hydroelectric power project, the first step toward construction of an aluminum plant at or near Kitimat, about 400 miles north of Vancouver.

Meanwhile Alcan plans to increase its primary aluminum ingot capacity to well over 400,000 metric tons a year by reopening its idle smelter at Beauharnois, Que. Hydro Quebec has agreed to supply 100,000 hp of hydroelectric power until Nov 30, 1953.

Reopening of the plant is scheduled for April. It is expected to produce some 32,000 metric tons a year. Alcan is spending approximately $3 million to bring the plant back to operating

He is a member of the American Society of Mechanical Engineers and of the Prime Movers Committee of Edison Electric Institute.

•

Ruoff Is Vice President of Porcelain Products

New vice president, general manager, and director of Porcelain Products, Inc, Parkersburg, W. Va., is George M. Ruoff, former commercial

G. M. RUOFF

vice president of Locke, Inc, Baltimore, Md.

Ruoff had been commercial vice president of Locke, with headquarters in New York City, since October, 1947. He holds a number of patents on insulators.

Ruoff joined Locke, then Locke Insulator Co, in 1927. In 1935 he was transferred to Richmond, Va., as district manager, and two years later he was assigned to the Baltimore territory as special representative. He became field sales manager in 1940 and general sales manager in 1944.

OBITUARY

Robert M. Emblidge, 80, retired superintendent of Buffalo Niagara Electric Corp, now part of Niagara Mohawk Power Corp, died Jan. 5 at Buffalo. Emblidge was given the job of throwing the switch on the first line which brought electricity from Niagara Falls to Buffalo in 1899. His utility career began in 1887 when he became a dynamo tender for U. S. Electric Light & Power Co, later absorbed by Buffalo Niagara. He retired from the latter firm in 1938.

NEW ELECTRICAL CONSTRUCTION

A weekly selection of U. S. electrical construction projects announced by private and government utility systems involving more than $70,000. Also listed are major industrial and construction jobs where electrical work is indicated or implied

UTILITIES

Proposed Construction

California—Sacramento Municipal Utility Dist., 210 K St., Sacramento, 410 mi. rural distr. line 25 mi. 67 kv transmission lines, addnl. sub-station capacity and sys. imprvs., Sacramento Co. **$3,925,000.**

California—Bureau Reclamation, Dpt. Interior, Elverta, four relay stations at various locations on portion of Central Valley Proj., Spec. 200C-140.

Calif., Berkeley—University of California, Administration Bldg., Berkeley, Campus, accelerator design bldg., No. 64, radiation laboratory Hill area. Plans deposit $25.

Colorado-Nebraska—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., Julesburg Tap-Julesburg, 115-kilovolt transmission line, Transmission Div., Missouri River Basin Proj., Spec. DC-3269. L. N. McClellan, ch. engr.

D. C., Wash.—P. Wks. Office, Potomac River Naval Command, Naval Gun Factory, Wash. 25, D. C., power equipment and accessories, Spec. 23221.

Iowa—Buchanan County Rural Electric Co-operative, Independence, system imprvs. and headquarters bldg., **$129,000.** A. W. Grubb, Vinton, consult. engr.

Illinois—U. S. Eng., 234 U. S. Court House & Custom House, 1114 Market St., St. Louis, 1, Mo., 4.16 kv line for power transmission and sub-station to serve Alton, pumping station Wood River Drainage & Levee Dist. Proj. Item II-C (1), Madison Co., CIVENG-23-065-51-43.

Montana—Bureau Reclamation, Bldg. 1-A, Denver Federal Center, Denver, Colo., steel take-off structure for Hungry Horse Power Plant, Hungry Horse Proj. Spec. DS 3250. Extended date.

New Mexico—Mora-San Miguel Electric Co-operative, Mora, 42 mi. rural distr. line and sys. imprvs., Mora Co. **$355,000.**

N. M., Espanola—Jemez Mountains Electric Co-operative, Inc., Espanola, generating units, $90,000. Plans deposit $25. Continental Engineers, Inc., Lubbock, engr.

N. M., Lovington—Lea County Electric Co-operative, Lovington, modification electric generating plant, **$90,000.** Plans deposit $25. Continental Engineers, Inc., 1621 Broadway, Lubbock, Tex., engrs.

N. C., Camp Lejeune—P. Wks. Office, Bldg. 1005, Marine Barracks, exten. industrial area electrical dist. sys. into second division shop area at Marine Barracks, Spec. 26352. Plans deposit $10.

South Carolina—South Carolina Public Service Auth., Moncks Corner, 33 kv rural distr. line, 13.9 mi. single circuit from point north of Murrell's Inlet to vicinity of Pawley's Island, Horry Co. Plans deposit $10.

South Dakota—Rushmore G. & T. Electric Co-operative, Rapid City, generating facilities, incl. 10,000 kw. steam generating plant, Pennington Co. **$2,164,000.**

South Dakota—West Central Electric Co-operative, Murdo, 2,032 mi. rural distr. lines, 34 mi. 69 kv transmission line and sys. imprvs., Lyman Co. **$3,975,000.**

Virginia—Mecklenburg Electric Co-operatives, Chase City, 1,000 mi. rural distr. lines, Mecklenburg Co. **$2,430,000.** REA allot. Ernest Edwards, c/o owner, ch. engr.

Washington—Bureau Reclamation, Dpt. Interior, Coulee Dam, one unit substation for industrial area at Grand Coulee Dam, Columbia Basin Proj., Spec. 1175S-92. L. N. McClellan, Bldg. 1-A, Denver Federal Center, Denver, Colo., ch. engr.

Wash., Richland—General Electric Co., prime contractor to Atomic Energy Comn. for operation of Hanford Works, Richland, rebuild and enlarging electrical substations. Plans deposit $50.

British Columbia—Aluminum Co. of Canada Ltd., Sun Life Bldg., Montreal, Que., water power in Tweedsmuir Park Area, incl. dam in grand canyon of Nechako River, initial development of 500,000 hp. power plant on Menano River, 1,000 hp. power plant at Chilio-Bute Inlet; 875,000 hp. Tahtsa-Kemalno; 1,000,000 hp. Eutsuk-Whitesail power lines to Kitimat on coast, smelter at Kitimat to process bauxite. Approx. **$500,000,000.**

Ont., Chalk River—Purchasing Agent National Research Council, Sussex St., Ottawa, national reactor unit at automatic plant. Approx. **$30,000,000.**

Low Bidders & Contracts Awarded

Bechtel Corp., 3780 Wilshire Blvd., Los Angeles, Calif. Contract Awarded. Approx. **$4,400,000.** erecting electrical substation to be known as Cutler Sub-station, NORWALK, CALIF. Southern California Edison Co., 601 W. 5 St., Los Angeles, Calif.

General Electric Co., River Rd., Schenectady, N. Y. Contract Awarded, **$5,040,402,** elec-drive system for 8 ft. supersonic wind tunnel, Spec. A-4602, Req. A-4602. MOFFETT FIELD, CALIF. National Advisory Committee for Aeronautics, Ames Aeronautical Laboratory, Moffett Field. Bids Dec. 6, awarded Jan. 2.

Carroll Constr. Co., 333 N. Michigan Ave., Chicago, 1, Ill., Contract Awarded, **$150,000,** SUBSTATION at 6033 N. Pulaski St., Zone 5, CHICAGO, ILL. Commonwealth Edison Co., 72 W. Adams St., Chicago Zone 3, Bids Dec. 12, awarded Dec. 29.

B-Line Constr. Co., First National Bank Bldg., Oklahoma City, Okla. Contract Awarded. **$763,038.** 618.4 mi. rural distr. lines, Jewell, Phillips and Smith Counties, KANSAS, Jewell-Mitchell Electric Co-operative Co., Mankato, Kan. Bids Dec. 22.

Combustion Eng.-Superheater, Inc., 200 Madison Ave., New York, N. Y. Contract Awarded. **$16,000,000.** 99,000 kw. steam generating unit addn., Hawthorn Station, KANSAS CITY, MO. Kansas City Power & Light Co., 14 and Baltimore Ave., Kansas City 6 Mo.

American Telephone & Telegraph Co., 195 Broadway, New York, N. Y. Owner Builds. **$2,000,000.** constr. TV facilities for Omaha, Neb., via Salt Lake City, Utah, to San Francisco, Calif., NEBRASKA, UTAH and CALIFORNIA.

Parsons Constr. Co., 25 and Spring Sts., Omaha, Neb. Contract Awarded. **$625,000,** repair two load lines an other imprvs. at Nebraska Ordnance Plant, WAHOO, NEB. U. S. Eng., 1709 Jackson St., Omaha, Neb.

General Electric Co., River Rd., Schenectady, N. Y., Low Bidder, **$290,450,** Schedule A; **$668,833,** Schedule B, bus structures, breakers, switchgear and generator ground equip. for McNary Dam. Serial CIVENG 51-30, OREGON, U. S. Eng., 19 E. Poplar St., Walla Walla, Wash. Bids Jan. 3.

Tennessee Valley Authority, New Sprankle Bldg., Knoxville, Tenn. Own forces. Approx. **$85,000,000.** Swan's Pond Steam Plant, 2 mi. from KINGSTON, TENN.

INDUSTRIAL, COMMERCIAL & PUBLIC BUILDINGS

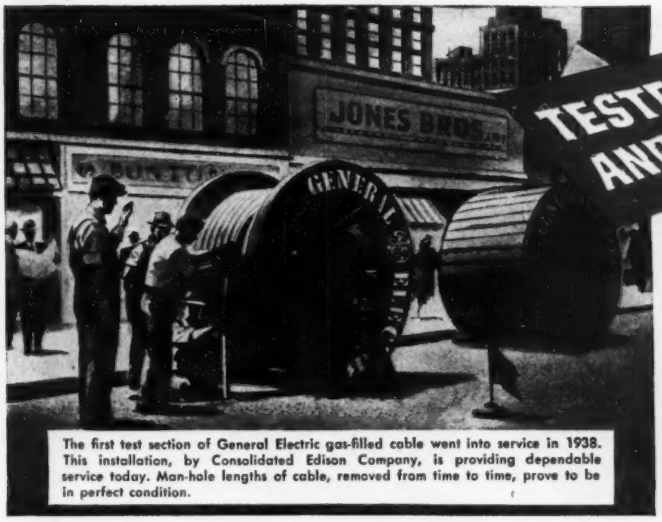
Proposed Construction

Calif., Mirimar—Dpt. Navy, Yards & Docks Annex, Arlington, Va., Brown Field Auxiliary Air Station, **$4,022,000.** Miramar Naval Air Base, **$13,488,000.**

S. C., Charleston—Medical College of State of South Carolina, Charleston, fdns. for teaching hospital, Total est. $9,300,000, Hopkins, Baker & Gill, Florence, archts.

Tex., Beaumont—Kaiser Aluminum & Chemical Corp., Airline Hy., Baton Rouge, La., aluminum plant. **$70,000,000.**

GAS-FILLED CABLE



The first test section of General Electric gas-filled cable went into service in 1938. This installation, by Consolidated Edison Company, is providing dependable service today. Man-hole lengths of cable, removed from time to time, prove to be in perfect condition.

. . . by more than 1,000,000 feet now in successful operation!

Low-pressure gas-filled cable—From 10 to 15 lb per sq in.—three conductors, three gas channels, with lead sheath. For 10 to 46 kv operation.

Medium-pressure gas-filled cable—Approximately 45 lb per sq in.—three conductors, three gas channels, and reinforced lead sheath. For voltages above 46 kv.

High-pressure gas-filled cable—Pressures to 200 lbs per sq in.—single conductor, with reinforced, double lead sheath and center gas channel. For operation at 69 kv and above.

Right! Today, over a million feet of General Electric gas-filled cable are in service, with never a failure due to inherent causes.

From the first 5000-foot test section installed in 1938 to a recently-completed installation of more than 40,000 feet, G-E gas-filled cable has operated to the complete satisfaction of its users.

Experience proves conclusively that the stable insulating and impregnating compound used in General Electric gas-filled cable is not affected by the presence of nitrogen gas, limited amounts of oxygen, or even mild ionization. Tests on laboratory samples and on cables in actual service show no measurable deterioration. Even after years of normal use, lengths of cable removed from service proved to be in perfect physical and operating condition.

If you would like to have the advantages of self-supervision and dependability for your high-voltage transmission and distribution circuits, choose General Electric gas-filled cable.

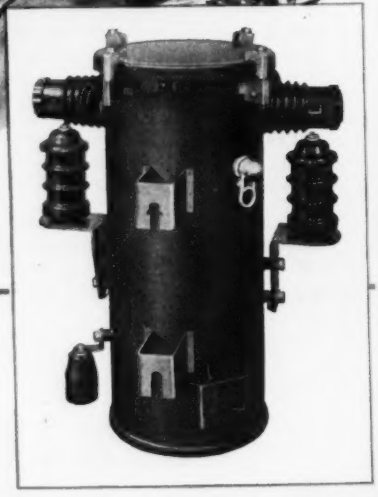
For complete information on the many features of gas-filled cable, as well as operating and performance data, get your free copy of the booklet, *G-E Gas-filled Cable*. Write to Section W19-127, Construction Materials Department, General Electric Company, Bridgeport 2, Connecticut.

You can put your confidence in—

GENERAL ELECTRIC

YOU CAN BE **SURE**.. IF IT'S

Westinghouse



A new line of "CSP" Transformers, with wall-mounted, high-voltage bushings and "De-ion®" arresters. Easier to install, with improved pole clearance. New, extra-strength bushings have large unbreakable "Enrup®" knobs for fast, positive hand-tightening of leads. Convenient location of arresters and brackets facilitates adaptation to wye or delta systems.

*T.M. Reg. U. S. Rubber Co.

Eliminates 80%

of your service calls

Here's how a large midwest utility credits "CSP®" (Completely Self-Protecting) Transformers with greater savings . . . better personnel relations, too, because they alleviated a costly problem:

> "No one liked the necessity of calling out a full crew in the middle of the night to restore service on a conventional transformer because of a simple fuse outage. *'Midnight Nuisance'* is the term we applied. Our linemen used even stronger language.
>
> "Now, 'CSP' Transformers give ample warning of overload conditions. The Emergency Control provides reserve capacity to forestall outages until change-outs are convenient. Since we've standardized on 'CSP' Transformers, we've practically eliminated the *'Midnight Nuisance'*.
>
> "Our line crews prefer their greater freedom from emergency calls . . . and our comptroller appreciates the savings!"

One sure fact stands out: "CSP" Transformers cut service costs

Get the full story on how Westinghouse "CSP" Transformers, with built-in lightning and thermal protection, can cut distribution costs for you. Ask your Westinghouse representative for a copy of booklet B-4249-A, or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh, 30, Penna.

J-70568

V.C. CABLE

Roebling Varnished Cambric is your A-1 specification for heat resistance

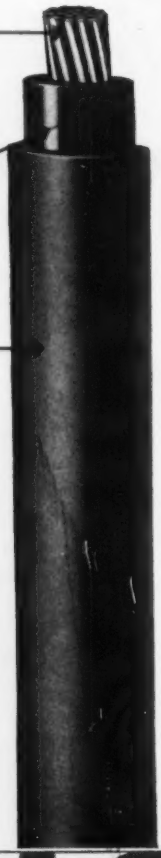
YOU'LL GET maximum dependability... you'll save real time and money... by adopting Roebling V. C. Cable as leads for transformers, generators, motors and oil switches... Roebling V. C. is furnished in single conductor sizes from 2,000,000 C.M. to #14 A.W.G.; in multiple conductor sizes from 750,000 C.M. to #14 A.W.G. It is recommended for use up to 17,000 volts between phases in single or multiple conductor construction; and to 26,000 volts for single conductor grounded neutral.

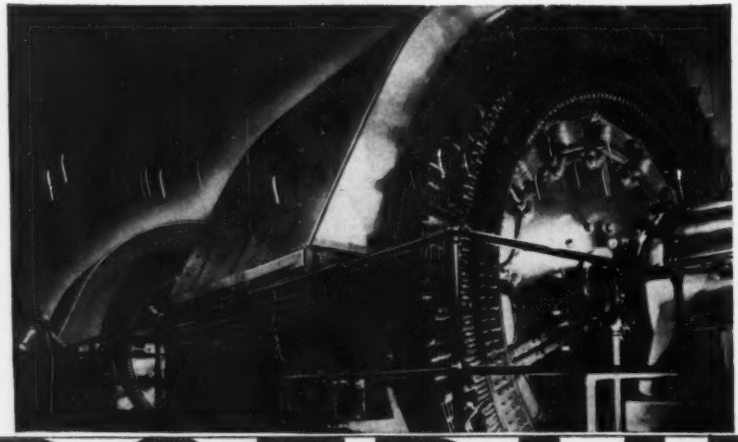
A big share of Roebling's complete line of electrical wires and cables is required today in the nation's rearmament program, but we shall do everything possible to meet your requirements. John A. Roebling's Sons Company, Trenton 2, New Jersey.

Manufactured with solid conductors or stranded in a variety of strandings, coated or uncoated, according to your needs. Available in single or multiple conductor.

Insulated with varnished cambric tape, in accordance with I.P.C.E.A. and Underwriters' specifications unless otherwise specified by you.

For outside covering you have a choice of braid, for service in dry locations; lead, for service in damp locations; and for aerial use or direct burial we recommend a protective armor such as steel tape or galvanized round wire armor.





ROEBLING

Atlanta, 934 Avon Ave ★ *Cambridge*, 31 Carleton St ★ *Chicago*, 5525 W. Roosevelt Rd ★ *Cincinnati*, 3253 Fredonia Ave ★ *Cleveland*, 701 St. Clair Ave, N.E. ★ *Denver*, 4801 Jackson St ★ *Houston*, 6216 Navigation Blvd ★ *Los Angeles*, 216 S. Alameda St ★ *New York*, 19 Rector St ★ *Odessa, Texas*, 1920 E. 2nd St ★ *Philadelphia*, 230 Vine St ★ *San Francisco*, 1740 17th St ★ *Seattle*, 900 1st Ave, S. ★ *Tulsa*, 321 N. Cheyenne St

NEWS ABOUT PEOPLE

Beaumont Heads Shawinigan Board; Utility Names Challies Senior VP

R. J. BEAUMONT

J. B. CHALLIES

R. J. Beaumont has been named chairman of the board of directors of Shawinigan Water & Power Co, Montreal. New senior vice president of the utility is J. B. Challies, who has been vice president and executive engineer. J. A. Fuller, executive vice president, was advanced to the presidency (EW, Jan 1, p 96). He succeeds James Wilson, who is retiring.

A native of England, Beaumont worked as a draftsman and engineer on design, construction, and operation of steam plants and substations for London Underground Railways before joining Shawinigan as a draftsman in 1910. The following year he became chief draftsman.

In 1913 Beaumont was made purchasing agent for Shawinigan and its electrical and manufacturing subsidiaries. He became manager of the subsidiary electrical distribution companies five years later, manager of the commercial and distribution department in 1931, and assistant general manager in 1937.

Beaumont was elected vice president in charge of distribution in 1941 and a director in 1947. He also has been vice president or director of a number of Shawinigan subsidiaries and president of St. Maurice Transport Co, Montreal. In 1925 and 1926 he was president of the Canadian Electrical Association.

Challies had a long career in government service before going to Shawinigan in 1924. After starting in 1903 as an engineering clerk in Topographical Surveys of Canada, he served as chief hydraulic engineer for the Department of Interior, superintendent of water power and director and chief engineer of the Water Power and Reclamation Service, director of the Dominion Hydrometric Survey, member of the Dominion Power Board and Dominion Fuel Board, consulting engineer on international waterway matters to the Department of External Affairs, and liaison officer for federal departments on the Research Council of Canada. He represented the government of Canada at the International Engineering Congress in San Francisco in 1915 and at the World Power Conference in London in 1924.

JAMES WILSON

Challies' first post with Shawinigan was as a departmental manager. In 1937 he was made assistant general manager, and in 1941 he was elected a director, vice president, and executive engineer. He is considered an authority on administrative investigatory and international features of water resource and power matters and has written technical articles on water power problems.

Wilson, the retiring president, has been with Shawinigan since 1911. A native of Scotland, he worked for the Royal Bank of Scotland and the Mercantile Bank of India, London, before going to Montreal with Drummond McCall & Co.

He joined Shawinigan as chief accountant and was made secretary in 1914, a director in 1930, a vice president in 1933, and vice president and general manager in 1937. He has been president since 1939. Wilson is a fellow of the Chartered Institute of Secretaries and a past president of its Canadian Branch.

•

W. C. Drummond Named Pioneer Vice President

(See Front Cover)

Warren C. Drummond, chief engineer of Pioneer Service & Engineering Co, Chicago, Ill., has been elected a vice president of the company.

He has been with Pioneer Service and its predecessor, Byllesby Engineering & Management Corp, since 1925, starting as mechanical operating engineer. He became chief engineer for Pioneer in 1945, a title he retains as a vice president.

Prior to 1925 Drummond worked for Northern States Power Co as fuel engineer, results engineer, and superintendent of steam electric generating plants.

condition. Alumina supplies for the reopened smelter will come from the plant already operating at Arvida.

The proposed British Columbia plant would produce an estimated 500,000 tons of aluminum a year. The development will take five years, with the first stage to be completed in three years, unless the aluminum shortage forces a speed-up. The first stage would cost $150 to $200 million and produce about 500,000 hp and 115 tons of aluminum.

Alcan engineers have been surveying for more than three years. Drilling is now in progress on the Nechako River in an effort to establish a satisfactory dam site. Sections of test transmission lines will be under study this winter. Work is also going on to determine the feasibility of a proposed transmission line from the power site on the Kemano River to the projected plant and city of about 50,000 persons at Kitimat.

The project calls for the damming of a lake and river system to change the flow from east to west and create a water storage system, raising the level of the entire Cotsa Lake-Eutsuk Lake-Nechako River system. At the western end of the system a 10-mi tunnel would carry water to a point where it would drop 2,600 ft to a power plant below. Power would be transmitted 50 miles to the smelter.

•

Westinghouse Will Equip Air Force Wind Tunnel

Four electric motors, two of them to be the most powerful in the world, will be built by Westinghouse Electric Corp for a new Air Force wind tunnel at the Arnold Engineering Development Center, Tullahoma, Tenn.

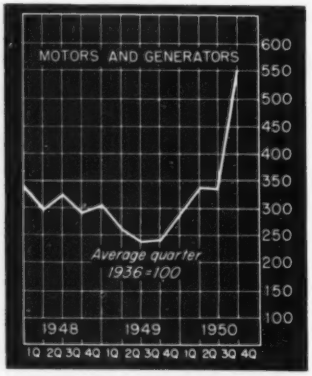
Westinghouse's order calls for $20 million worth of electrical equipment. Two motors will exceed in rating the 65,000 hp of those now in service at Grand Coulee. Westinghouse's East Pittsburgh plant will build the motors and switchgear, and its Sunnyvale, Calif., plant will supply a compressor to push air through the tunnel at speeds up to and above the speed of sound. The compressor, said Westinghouse, will be the world's largest rotating machine.

The new tunnel will be used to test full-sized jet engines, guided missiles, and aircraft wing sections and fuselages.

Motor, Generator Orders Zoom in Third Quarter

Orders received for motors and generators zoomed in the third quarter of 1950.

The index compiled by the National Electrical Manufacturers Association went to 551 in the third quarter, compared to 337 in the second period. The third-quarter figure was more than double the index number for the corresponding quarter last year, when the index read 224.



MANUFACTURING BRIEFS

Lincoln Electric Co of Canada, Ltd, subsidiary of the Cleveland firm, plans to double its existing manufacturing facilities in Toronto. Construction of a $500,000 addition to the company's plant will begin in February and is expected to be completed about Oct 1. About 45,000 sq ft of manufacturing space will be added.

Thirty-five generators with capacities of 100,000 kw and more now are under construction at Westinghouse Electric Corp, the company reported in its year-end review. Units ranging above 150,000 kw are being considered.

Worthington Pump & Machinery Corp has acquired the land, buildings, and equipment of National Transit Pump & Machine Co in Oil City, Pa. The latter firm is in process of dissolution. The plant covers about 500,000 sq ft.

An invention that contributes to tripling the life of fluorescent tubes has been patented by three Sylvania Electric Products, Inc, engineers. Drs E. F. Lowry, Eric L. Mager, and G. W. Keilholtz added a small quantity of zirconium dioxide to the cathode coating used in making fluorescent tubes. With this process Sylvania has raised rated life of its fluorescent tubes from 2,500 hr to 7,500 hr.

General Electric Co has given the "go ahead" on construction of an electronics plant at Auburn, N. Y. The specific equipment to be manufactured has not yet been definitely decided. Completion of the plant is scheduled for late summer or early fall.

SALES ASSIGNMENTS

COMPANY STAFFS

Allis-Chalmers Manufacturing Co, Milwaukee, has named N. W. Landis manager of the Detroit district office, succeeding F. S. Schuyler, retiring after 43 years of service. Landis will be succeeded as manager of the Syracuse office by A. J. Mestier, Jr, a sales representative in the New York district office.

Reliance Electric & Engineering Co, Cleveland, has established new branch sales offices in Newark, N. J., and El Dorado, Ark., and has transferred the northern and western New York State district office from Syracuse to Buffalo. New district manager in Buffalo is C. B. Allen, formerly sales engineer in the Detroit office. William H. Brehmer, sales engineer in Buffalo, will head branch operations in Syracuse. Elwood H. Koontz will be branch manager in Newark, with F. R. Obenchain as sales engineer. Both were sales engineers in the New York office. R. C. Suttle, sales engineer in the Cincinnati office, has been made manager of the new office at 202 Washington Ave, El Dorado, Ark. W. C. McConnell, who has been directing sales at the office recently opened in Charleston, W. Va., succeeds Allen in Detroit. C. V. Harp, Jr, transferred from Houston, replaces McConnell at Charleston, and R. I. Corvell, Jr, sales engineer at Syracuse, replaces Suttle in Cincinnati.

Westinghouse Electric Corp, Lamp Division, Bloomfield, N. J., has named Elwood B. Johnson manager of the North Jersey Lamp Sales Division. His headquarters are at 528 Ferry St, Newark. He has been branch manager at Newark.

REPRESENTATIVES

Apex Electrical Manufacturing Co, Cleveland, has appointed the Kane Co, 168 North Third St, Columbus, Ohio, distributor in the Columbus area.

H. E. Ransford Co, Pittsburgh manufacturers' agents for high tension electrical equipment, has opened an electronic sales engineering department to handle electronic, laboratory, and industrial instruments. Samuel H. Coombs, of the Allen B. DuMont Laboratories, CRO Division, will be in charge of the department.

NEW EQUIPMENT

Motor Starter

Protection of operating personnel as well as the connected machine reportedly is stressed in a new motor starter—Motor Watchman, Class 10-100-S1. It starts, stops, and provides overload protection for single-phase, polyphase, and dc motors.

Over-center toggle mechanism is quick-make, quick-break. De-ion arc-quenching is utilized, and thermal overload relay is the bimetallic disc type. Ratings go to 600 v, 7½ hp polyphase and 5 hp single-phase, or 220 v, 1½ hp dc.

Westinghouse Electric Corp, P. O. Box 2099, Pittsburgh 30, Pa.

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Fire Extinguisher System

Automatic protection against the fire hazards caused by ovens, driers, and transformers is reportedly furnished by a new dry-chemical piped system. This system, said to be the first using dry chemical as the extinguishing agent, is operated by a heat-actuated device. A fire causes air to expand within the device; this trips a nitrogen cylinder release, pressurizing the dry chemical container.

Electric controls can be included to shut off motors and fans, sound alarms, and transmit signals to central stations or fire alarm headquarters. Manual operation, as well as automatic, is provided.

Ansul Chemical Co, Marinette, Wis.

Turbine-Generator Units

Steam turbine-generator units of WA Series have been announced in ratings of 500 to 7,500 kw. Governor and regulating characteristics provide for paralleling with existing units and tie-lines.

The design incorporates the simplicity of three-bearing unit construction with multi-stage impulse turbine, housing-type generator, and direct-connected exciter construction. Several features are the forged rotor and bucket wheel discs, chrome steel buckets, all-labyrinth type shaft gland and interstage packing, and enclosed oil-piping above foundation in both generator and turbine.

Allis-Chalmers Mfg Co, 932 S. 70th St, Milwaukee, Wis.

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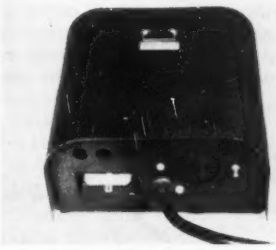

Humidity Controller

The Plug-In humidity controller is reported to be a simple automatic control for electrically-powered humidifiers and dehumidifiers. The three steps needed to put the controller into use eliminate running or cutting into conduit and attaching relay boxes to the pilot controls: (1) Plug humidifier into the control; (2) plug control into a wall outlet; (3) Set the dial at the percentage of relative humidity desired.

This controller can handle a load of 15 amp at 115 v. Allowable continuous load of 1,700 w permits a number of standard industrial-size humidifiers to be plugged into the controller at one time.

The Abbeon Supply Co, 58-10 41st Drive, Woodside, N. Y.

Strain Gage Recorder

Static and dynamic load measurements may be made with SR-4 strain gage amplifier and recorder assembly. The instrument is a direct-writing, inkless, vacuum-tube voltmeter consisting of: (1) An amplifier giving an over-all gain of at least 6,000 and (2) a fast-reacting D'Arsonval galvanometer in which 10 ma may, for example, produce a writing arm torque of 200 dyne-cm and deflection of one centimeter on the chart. It may be used for measuring strains, forces, fluid pressures, displacements, vibrations, acceleration, etc, on a strip chart with rectangular coordinates. It can also be used with temperature sensitive elements to reproduce any electrical phenomena ranging from a few millivolts on up to more than 200 v.

The Baldwin Locomotive Works, Philadelphia 42, Pa.

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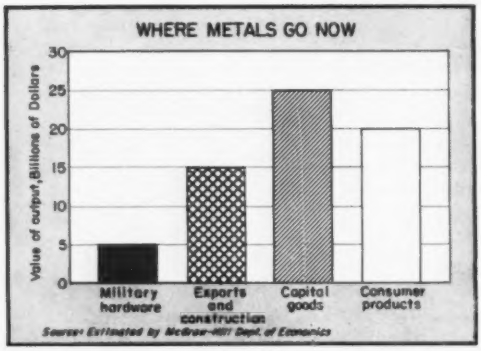
Oil Resistant Wire

Designed for wiring in conduit to gas pump islands at filling stations, and for lighting circuits at refineries, is a new gasoline and oil-resistant wire, called Geotrol. Conductors are insulated with vinyl compound and sheathed in a jacket said to be highly resistant to petroleum products. Insulated conductors are available in black, white, red, green, orange, blue, and yellow; solid conductors in sizes 14, 12 and 10 Awg. Elimination of a lead covering is reported to save in cost, weight, and installation time.

General Electric Co, Construction Materials Dept, Bridgeport 2, Conn.

Electrical Business Outlook



PEACETIME USES—consumer goods and business equipment —now dominate metalworking picture. Military takes little

The Metals Problem Gets Worse

It's only the beginning. That's the way for utility executives to look at the order, recently received from the Defense Power Administration, to report metal needs for proposed construction.

Acting on this information, Washington will give expediting assistance on essential utility projects. Then priorities may be issued. But the metals problem is getting too snarled up for either of these schemes to work.

A full-scale Controlled Materials Plan, governing all metal-using industries, now seems certain within a few months. "Essential" programs—armaments, steel capacity, freight cars, etc—are piling up so fast that the present simple priorities system will break down.

Military Will Take $25 Billion More

You can tell how bad the metals pinch will get from the charts on this page. Military needs for "hardware" are scheduled to double the present $5 billion per year figure by June. By December, they will have multiplied 6 times, to $30 billion.

Nearly all this increase—$25 billion per year of metal products—must come out of only $65 billion current annual metalworking production. There's little hope of getting more non-ferrous metals with which to work. And despite expansion efforts, only about 4% more steel will be produced this year. At best, the rate of metalworking output isn't likely to top $70 billion during 1951.

To make matters worse, about $20-25 billion of current metal use consists of items whose production can't be cut. About $15 billion worth of this is slated for vital construction and essential exports to our military allies. The remainder consists of maintenance and repair parts for equipment already in use.

Let's assume annual metalworking output reaches $70 billion at the end of 1951, and that $20-25 billion is in hard-to-cut items. That leaves only $50-45 billion of civilian metal products from which the planners must cut $25 billion to make way for additional military orders.

Civilians Will Get Repair Parts Only

To do this would require eliminating all production of consumer metal wares, except for repair parts. Consumer goods output, now valued at $20 billion per year, would be slashed to the maintenance level of $5 billion.

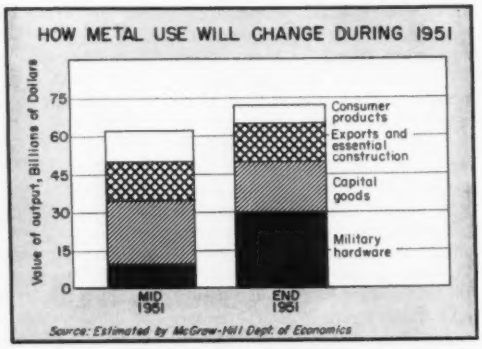
Then what about new plant and equipment? A $25 billion cut in $45-50 billion of available civilian production would leave only $20-25 billion for business equipment even if no new consumer goods are produced. That's less than present capital goods output.

But Some Capital Expenditures Must Be Increased

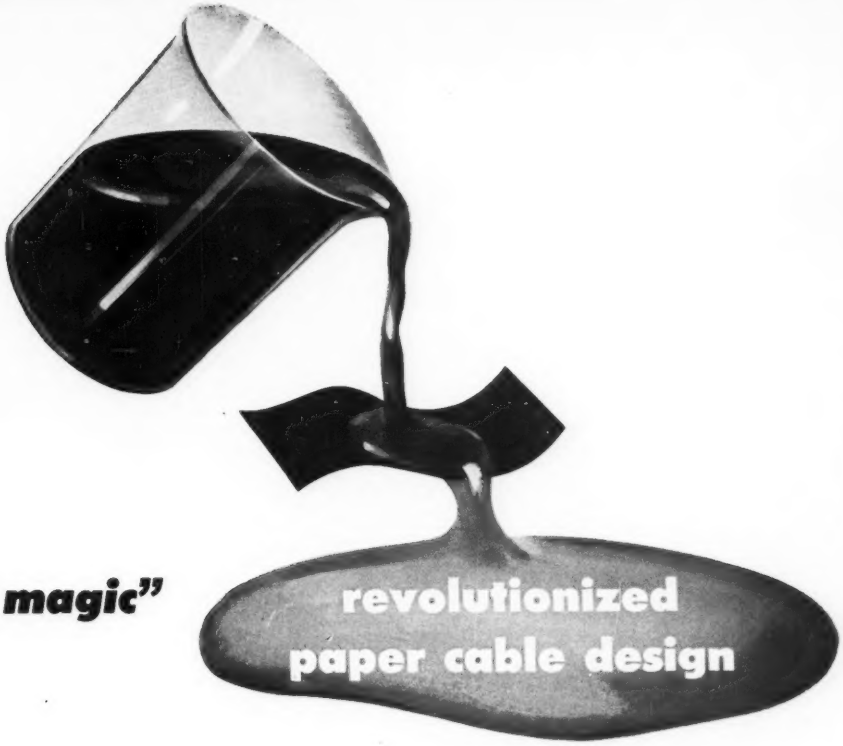
But the military program cannot proceed unless capital expenditures are stepped up in such lines as transport, steel, and power generation. So output of other capital goods, less essential to defense, will have to be cut sharply. Such cuts could extend to utility transmission and distribution equipment.

Figures still aren't available on how many tons of metal will be needed for military items, and how much will be left for various civilian uses. No tonnage calculations can be made until the Pentagon draws up its detailed bill of materials for planes, tanks, and other equipment. This will be done slowly (probably with many revisions); so no clear picture will be available for several months. Metals producers and consumers in the meantime will both be left guessing.

But the dollar estimates which have been made show the trend clearly. Most civilian programs, including the budgeted utility program, face savage cuts. And a Controlled Materials Plan will have to come soon to prevent chaos.



BY YEAR END output of consumer goods will be limited to repair parts. Output of capital equipment will be reduced also. And military products will dominate in metals field



how "black magic" revolutionized paper cable design

Everybody knew that in paper cable the oil deteriorated under heat and electrical stresses.

But recalling that carbon black can purify oil and tends to stabilize it, Anaconda cable research men asked themselves why it couldn't do the same in paper cable.

They found it could and did!

Today ANACONDA Type CB* (Carbon Black) Power Cable offers the best power cable service that money can buy.

Not only does it contain carbon black, but also it can be made with resilient binder and sheathed with F-3**, the superior ANACONDA Alloy-Lead Sheath that is so resistant to slow-bending fatigue, creep, burst, abrasion, vibration and aging.

Net result: you get maximum cable life and economy.

Want more facts? Proof? Ask your nearest Anaconda Sales Office. Anaconda Wire & Cable Company, 25 Broadway, New York 4, New York.

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*CB—Carbon Black
(U. S. Patent 2,102,129)
Reg. U. S. Pat. Off.
**F-3—Arsenic-Lead Alloy
(U. S. Patents 2,300,788 and 2,374,735)
Reg. U. S. Pat. Off.

The right cable for the job **ANACONDA®**

WIRE AND CABLE

Cuts Excitation Losses 2/3

ALLIS-CHALMERS
5/8% STEP
REGULATORS

YOU ELIMINATE ⅔ of the kilovars due to regulator excitation by using Allis-Chalmers DFR, ⅝% step, station type regulators. These modern regulators require only 8% excitation . . . compared with 25% or more for conventional regulators. On big systems, that's big money!

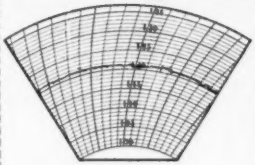
You can figure your losses when using old type regulators on the basis of static capacitors needed to balance the reactive kva ($10 per installed kva). Or you can capitalize the amount of released station capacity at $100 per kva. Either way the loss due to conventional regulators on big systems is large.

On any size system the low excitation current of the DFR regulator can be evaluated in total savings amounting to 5% of the cost of the regulator. This is an *inherent* advantage of the step type regulator.

Allis-Chalmers single phase station type step regulators are furnished in sizes up to 6900 v. 250 kva.

For complete information on cutting kilovar losses from regulation, call your nearby A-C Sales Office, or write Allis-Chalmers, Milwaukee 1, Wis.

Close Regulation at Low Cost



OLD TYPE 25%

% Excitation Requirements Based on Regulator KVA

REASON 1

Holds voltage within ± ¾ volt band. Line fluctuations are followed accurately without damping or overshooting.

Regulation	Amp Capacity
±10 %	100%
± 8¾%	114%
± 7½%	133%
± 6¼%	160%
± 5 %	200%

REASON 2

Requires only ⅓ the excitation of other types! Low exciting current releases system capacity for useful loads.

REASON 3

Boosts base current capacity as much as 200% in as many as five intermediate steps with exclusive *Vari-Amp* feature. No need for by-passing or removing regulator from the line during adjustment.

Vari-Amp is an Allis-Chalmers trademark.

A-3245

ALLIS-CHALMERS

Originators of ⅝% Step Regulation